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ABSTRACT

A sample of 12 recent and older sixth grade social studies textbooks was examined to determine their level of explicitness, one of the criteria used to determine the "friendliness" or comprehensibility of a text. Researchers randomly selected three samples--usually chapters--from each of the 12 textbooks. The Explication Inventory (consisting of six items, each with a five-point scale) was used by two raters to rate each sample, and the ratings for the three samples from each textbook were then averaged to get a total for that text. To check for reliability, a third rater rated the three segments for a random sample of half the textbooks. The results of analysis indicated no statistically significant differences on total explication scores between the recent and the older textbooks. The raters concluded that the social studies textbooks they examined tended to be friendly on the criterion of explicitness, although it should be noted that text friendliness is also affected by extra-text determinants such as student abilities and curricular and instructional factors. (References and tables are provided; appendices consist of the Explication Inventory and a list of the textbooks reviewed.) (AEW)

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Explicitness in Sixth-grade Social Studies Textbooks

Teachers and researchers have been concerned with the effect of textbooks on students' reading performance since the pioneering work of Gray and Leary (1935). In recent years, a major topic of research has been the friendliness or considerateness of texts. Friendly texts contain features that presumably make them easier to comprehend.

Features that a friendly or considerate text should contain have been proposed. For example, Anderson and Armbruster (1981), Langer (1983), and Tierney, Mosenthal, and Kantor (1984) have all offered guidelines for examining textbooks. In addition, Singer (1986) has developed a comprehensive Friendly Text Inventory (FTI). This FTI groups items for evaluating texts into seven major categories:

1. Text organization: the arrangement of information including such factors as a text's cohesiveness and use of signal words.
2. Explication: the direct statement of information so that the reader is not required to infer.
3. Conceptual density: the number of new ideas and vocabulary introduced per text sample.
4. Metadiscourse: the author's direct comments to the reader about the information in the text.
5. Readability: the adequacy of the text with regard to such factors as sentence and word length and use of personal pronouns.
6. Instructional devices: features that aid learning from the text such as preposed questions, diagrams, and summaries.

7. Instructional appropriateness: the inclusion of such features as up-to-date information and the suitability of the text for the curriculum at a particular grade level.

Critics have written some bleak appraisals of the friendliness of textbooks (Anderson & Armbruster, 1981; Anderson & Armbruster, 1986; Anderson, Armbruster, & Kantor, 1980; Davison & Kantor, 1982; Kantor, Anderson, & Armbruster, 1983; Langer, 1983; Tierney, Mosenthal, & Kantor, 1984). These appraisals have generally consisted of numerous examples of poorly written textbook passages. Although the examples are striking, Kane (1980) noted that critiques may be misleading when a text segment from the middle of a lesson is presented out of context or when a critic assigns a purpose to a text which was not intended. Moreover, the examples cited in these critiques may or may not be representative of the texts from which they are drawn, since they have not been accompanied by evidence of systematic sampling from particular texts or by evidence of the reliability of the ratings.

In contrast, our purpose was to conduct an empirical study of a sample of sixth-grade social studies textbooks that are or have been widely used in the schools. In this initial phase of our research, we focused on one major aspect of text friendliness, a text's degree of explicitness. We compared both recent and older textbooks since the intensive burst of research on reading in the past 10 to 15 years may have influenced the nature of textbook writing.

Explication of information, one of the major factors hypothesized to contribute to text friendliness (Singer, 1986) and learning (Bransford,

1985), refers to direct statements that do not require the reader to infer, organize, or construct relationships. In a schema-theoretic view, readers comprehend a message when they are able to bring to mind a schema that gives a good account of the objects or events described in a message (Anderson, 1985; Rumelhart & Ortony, 1977). Therefore, well-explicated texts should facilitate comprehension since they should enable readers to locate or construct appropriate schemata and relationships among schemata more easily.

If a text is inexplicit or imprecisely elaborated, students are faced with what is essentially an arbitrary list of facts, the most difficult type of material to learn and retain (Bransford, 1985; Stein & Bransford, 1979; Stein, Morris, & Bransford, 1978). If an inexplicit text deals with familiar concepts, students may be able to locate appropriate existing schemata to make the text meaningful. Indeed, Bransford (1985) has pointed out that experts are not likely to notice when facts are presented in an arbitrary way because they already have schemata that allow them to understand the significance of the information. Since content-area textbooks are designed to teach students <u>new</u> information, inexplicitness presents a more challenging problem: Content-area texts require the <u>construction</u> of new schemata or the modification of old ones, not just the activation of existing knowledge structures. As a result, content-area texts need to facilitate schema construction by clarifying the significance and relevance of facts and relationships.

In our analysis of social studies texts, we used the Explication Inventory of the FTI, shown in Appendix 1. This inventory lists six areas that could be expected to contribute to explicitness. First, since arbitrary

lists of facts are harder to learn than related sets of information, textbooks need to explicate relationships such as how properties are related to categories and how function relates to structure. For example, in a biology text, a set of facts about veins and arteries can seem arbitrary and confusing unless the text clarifies such points as the relevance of elasticity and thickness of arteries to the functions they perform (Bransford, 1985). Thus, texts need to directly state core concepts and elaborate relationships so that students can understand the significance of information. In other words, explicit texts provide reasons for functions and events. Second, an explicit text highlights and clearly defines terms as they are introduced since understanding the vocabulary contributes to the understanding of new concepts. Third, explicit texts use vivid examples, analogies, or figurative language to help clarify new ideas. Fourth, explicit texts help activate necessary background knowledge. For example, they show students how new ideas in the text are related to knowledge students already have. Fifth, explicit texts use sentence structure that facilitates comprehension. They may, for example, use relatively short, direct sentences as opposed to unnecessarily complex structure and terminology. Sixth, explicit texts orient readers to the central ideas in a unit, chapter, or text segment. Such an orientation occurs when a text informs readers about the goals and purposes they are to read for or signals the central ideas with such devices as the questions asked and the purposes or introductions given.

Method

Materials

The materials used in this study included the Explication Inventory, a

rater's manual to accompany the Inventory, and 12 sixth-grade social studies textbooks.

As shown in Appendix A, the Explication Inventory consists of six items. Each item rates a textbook sample on a five-point scale. The Inventory was accompanied by a 12-page manual. The first page of this manual consisted of an overview of the task and general instructions such as advising raters to consider a single criterion at a time. The rest of the manual presented examples to illustrate the rating levels for each of the six items. Each example was accompanied by a comment about why it received that particular rating. The manual was constructed by making an intensive search for appropriate examples in randomly selected passages from four sixth-grade social studies textbooks. An extensive revision process was carried out to assure that the examples and comments would be clear to the raters.

Six recent sixth-grade social studies textbooks were sampled from a list of widely-used texts that had been identified independently by two social studies professors. These texts were published in 1980 or later. Six texts, published between 1970 to 1973, were also selected. In all but one case, these older textbooks were selected from the same publishers as the newer textbooks. The texts are listed in Appendix B.

Procedure

Three random samples were selected from each of the 12 textbooks. In most cases, a sample was a complete chapter. However, some 45 to 50 page-long chapters were subdivided at lesson boundaries. In other cases, three-to-four-page segments that were labeled chapters in their respective textbooks were combined into samples of two to three

chapters. The average sample segment was 13 pages long.

Two raters were instructed on the Explication Inventory and the manual. Their ratings for the three samples from each textbook were averaged to get a total for that text. Differences in the ratings for the two independent raters were resolved in conference. Then, to check for reliability, a third rater rated the three segments for a random sample of half the textbooks. The inter-rater reliability between the initial ratings and the third rater's scores was r = .88. All raters were experienced teachers who were also graduate students.

Results

Total Scores

The Explication Inventory has six items that can each be rated from 1 to 5. Therefore, the total scores on the inventory can range from 6 to 30. The lower the score, the more explicit the text.

The mean total score for the 12 texts was 14.16. As shown in Table 1, the total scores ranged from 10.67 to 20. The mean for the 1980 through 1986 texts was 14.61, while that for the 1970 to 1973 texts was 13.72. A t-test between the means for the older and newer texts indicated no statistically significant difference (t = .59, df = 10).

These total scores can be divided by 6 to allow them to be interpreted according to a 5-point scale with 1 being very explicit, 2 explicit, 3 mixed, 4 inexplicit, and 5 very inexplicit. Table 1 indicates that on such a 5-point scale, 9 of the texts fall into the explicit category while 3 texts are mixed with regard to explication.

Insert Table 1 about here

Individual Items

To obtain specific information on particular aspects of explication, older and newer textbooks were also compared on the six individual items of the Explication Inventory. T-test analyses indicated a statistically significant difference between texts only for item 6. This item deals with whether the central idea of a text segment is explicit (t = 2.23, df = 10, p = .050). Newer texts rated somewhat less explicit than did older texts, as can be seen in Table 2.

As with the total explication scores, mean text ratings for the individual items fell into categories 2 and 3. Table 2 indicates the texts rated most explicit on using direct sentence structure (item 5) and least explicit on defining new vocabulary and activating prior knowledge (items 2 and 4).

Insert Table 2 about here

Discussion

The results indicated no statistically significant differences on total explication scores between the recent and older textbooks we analyzed. Although there was a statistically significant difference between newer and older texts on one of the individual items (in favor of the older texts), there appears to be little change in degree of explicitness despite considerable research and discussion on reading since the 1970-1973 publication dates of the older texts.

None of the twelve widely-used texts which we analyzed rated in the top category of very explicit. Most fell into the second category indicating that they tended to satisfy the six criteria of explication. However, three

of the texts rated in the third category which indicates that they were mixed on their degree of explicitness. The mean ratings of the individual items suggests that the twelve texts may be weaker in highlighting new vocabulary and helping students activate appropriate knowledge than in the other areas of explication.

Thus, although our results suggest areas of explication to which a teacher may need to give extra support, they do not indicate as bleak a picture as has been painted in some critiques. Our findings may be less bleak because the length of the passages we examined differed from those used in previous critiques. We used chapter-length segments whereas previous critiques used paragraph segments. The longer sample was necessary because expository text often requires cumulative paragraphs to develop a topic. In addition, our findings may appear to differ from other studies because we have not focused on the same area that others examined. For instance, Crismore (1983), who found differences in friendliness between school texts and non-school social studies books, looked only at metadiscourse.

Although this study analyzed one major aspect of text friendliness, and although similar research is needed on other text dimensions, it should be noted that text friendliness is also affected by extra-text determinants such as student abilities and curricular and instructional factors (Singer, 1986). Even if a textbook rates well on explication or other text dimensions, the text can still vary in difficulty for differing ability groups. For example, Zack and Osako(1986) found that inconsiderate (unfriendly) text features which disrupted the comprehension of average and poor second-grade readers did not affect better readers'

comprehension.

Moreover, text friendliness is also affected by an extra-text instructional variable--the effect the teacher has on all the components in the process of learning from text (Singer, 1985; Yopp & Singer, 1985). Indeed, teachers can make texts friendly for students. For example, Flood, Lapp, Singer, and Mathison (1985), in a study with college students, found that students' reading performance was affected not by friendly or unfriendly text features but rather by the pre-reading input the instructor provided.

To summarize, critiques of content-area texts imply that there is a prevalence of unfriendly texts including arbitrary, list-dominated, or inexplicit ones. But this generalization was based on anecdotal rather than on empirical research. In contrast, our empirical study revealed that most of the widely used sixth-grade social studies textbooks that we analyzed received an explicit rating. In addition, there was very little difference in ratings of older and more recent textbooks in our sample despite the intervening years of criticism. Therefore, we conclude that the social studies textbooks we examined tend to be friendly on the criterion of explicitness.

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Appendix A

Explication Inventory Adapted from the Friendly

Text Evaluation Inventory (Singer, 1986)

Text Publisher _____ Pages _____ Rater _____

Friendly Text Evaluation Inventory

Directions: Read each criterion and judge the degree of agreement or disagreement between it and the text. Then circle the number to the right that indicates your judgment.

1 = Strongly agree (SA)	**= indicates that the text sample consistently meets the criterion**
2 = Agree (A)	**= indicates that the text sample meets the criterion for the majority of the sample**
3 = Uncertain (U)	**= indicates that the criterion is met irregularly, unclearly, or in a mixed fashion**
4 = Disagree (D)	**= indicates that the criterion doesn't appear to be met for a majority of the text sample**
5 = Strongly Disagree (SD)	**= indicates that the criterion does not appear to be met in the text sample at all**

Explication	SA	A	U	D	SD
1. The text provides reasons for functions or events. For example, a social studies text would not just describe the Indian caste system, but would also explain the beliefs that perpetuate it.	1	2	3	4	5
2. The text highlights or italicizes and defines new terms as they are introduced at a level that is familiar to the student.	1	2	3	4	5
3. The author clarifies new ideas and makes them vivid by using examples, analogies, metaphors, similes, personifications, or allusions.	1	2	3	4	5
4. The text helps students activate appropriate prior knowledge by reviewing or reminding readers of previously acquired knowledge or concepts.	1	2	3	4	5
5. The author explains ideas in relatively short, direct sentences.	1	2	3	4	5
6. The author makes explicit the central idea(s) of the text segment.	1	2	3	4	5

Appendix B

Textbooks Reviewed

Bass, H. J.(1972). Man and society. Morristown, NJ: Silver Burdett.

Brandwein, P. F., & Bauer, N. W. (1980). The world. NY: Harcourt Brace Jovanovich.

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Branson, M. S. (1980). Around our world. Boston, MA: Houghton Mifflin.

Buggey, J. (1983). Our world today. Chicago, IL: Follett.

Cooper, K. (1982). The world and its people: Europe, Africa, Asia, and Australia. Morristown, NJ: Silver Burdett.

Dawson, G. S., Tiegs, E. W. , & Adams, F. (1983). The world. Lexington, MA: Ginn.

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Hanna, P. R., Kohn, C. F., &Ver Steeg, C. L. (1970). Inter-American studies. Glenview, IL: Scott, Foresman.

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Schreiber, J., Stepien, W., Patrick, J., Remy, R, Gay, G., & Hoffman, A. J. (1986). Our world: Lands and cultures. Glenview, IL: Scott, Foresman.

Shorter, B., Starr, N., & Kenworthy, L. S. (1972). Eleven nations. Lexington, MA: Ginn.

Table 1

Total Explication Scores for Sixth-Grade Social Studies Textbooks

Text Publication Date	Total Explication Score	Category of Explicitness[a]
1986	13.50	2.25
1983	10.84	1.81
1983	20.00	3.34
1982	12.50	2.08
1980	17.17	2.86
1980	13.67	2.28
1973	15.17	2.53
1972	14.49	2.42
1972	13.65	2.28
1972	14.50	2.42
1970	13.84	2.31
1970	10.67	1.78
Mean for 1980-86 texts	14.61	
Standard deviation	3.36	
Mean for 1970-73 texts	13.72	
Standard deviation	1.59	
Mean for all texts	14.16	
Standard deviation	2.55	

[a]Categories are 1=very explicit, 2=explicit, 3=mixed, 4=inexplicit, 5=very inexplicit

Explicitness

Table 2
Explication Scores for Sixth-grade Social Studies Textbooks by Individual Items

Item[a]	Text Publication Date	Mean	Standard Deviation
provides	80-86	2.44	.65
reasons	70-73	2.02	.44
	total	2.24	.57
defines	80-86	2.67	.98
terms	70-73	3.06	.73
	total	2.86	.85
uses	80-86	2.67	.70
examples	70-73	2.17	.30
	total	2.42	.58
reviews	80-86	2.70	.72
prior	70-73	2.83	.62
knowledge	total	2.76	.64
uses	80-86	1.58	.29
direct	70-73	1.61	.33
sentences	total	1.60	.30
explicit	80-86	2.61	.52
central	70-73	2.02	.39
idea	total	2.32	.53

[a]See Appendix A for full items.